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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/316,518	05/21/1999	KENNETH L. STANWOOD	ENS-002-PAP	7910

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EXAMINER

LY, ANH VU H

ART UNIT	PAPER NUMBER
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2662

DATE MAILED: 06/02/2003

18

Please find below and/or attached an Office communication concerning this application or proceeding.

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Office Action Summary

Application No.

09/316,518

Applicant(s)

STANWOOD ET AL.

Examiner

Anh-Vu H Ly

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on amendment filed March 04, 2003.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 24-96 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 78-87 is/are allowed.
- 6) ☒ Claim(s) 24-77 and 88-96 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Response to Amendment

1. This communication is in response to applicant's amendment filed March 04, 2003.

Claims 24-96 are pending.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

2. Claims 24, 26-38, 42-48, 50-60, 62-69, 72, 74-77, and 88-91 are rejected under 35 U.S.C. 102(e) as being anticipated by Papadopoulos et al (US Patent No. 5,594,720).

With respect to claims 24, 26-34, 36, 38, 42-48, 50-60, 62-69, 72, 74-77, and 88-91, Papadopoulos et al discloses (col. 5, lines 11-52 and Fig 4) a format for frame 401. Frame 401 is divided into four sections. Call management sections are handled by uplink control section 405, which contains bits for handling requests for uplink information slots, and downlink control section 407, which contains bits indicating which uplink and downlink information slots are assigned for the uplink and downlink users to send and receive information. The remainder of frame 401 is divided into S slots, $S=U + D + A$, where U slots allocated for uplink information transfer and D slots allocated for downlink information transfer. The number of slots allocated between uplink section 410 and downlink section 415 can vary with each frame as indicated by partition 412. Wherein, the partition 412 between the uplink and downlink slots varies according

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to demand (uplink and downlink bandwidth requirements in a frame are determined, calculated, and allocated using associated and respective bandwidth utilization parameters). Further, such dynamic bandwidth allocation is implemented in the cellular communication system, as illustrated in Fig. 1 (periodically enabling uplink transmissions during allocated uplink time slots and downlink transmissions during allocation downlink time slots).

With respect to claims 35 and 37, Papadopoulos et al discloses in Fig. 7, a diagram of partially-shared time division duplexing frame format (a frame comprises N time slots); wherein, a number of slots 715 allocated for downlink transmission (a first number N1 time slots allocated for downlink transmissions only) and wherein, the remaining slots 710 and 720 allocated for uplink and downlink transmissions (allocating the remaining N2 time slots for both uplink and downlink transmissions).

3. Claims 70-71 and 73 are rejected under 35 U.S.C. 102(e) as being anticipated by Raith et al (US Patent No. 5,729,531).

With respect to claims 70-71 and 73, Raith et al discloses (see Abstract) a general allocation method to approximately evenly distribute the mobile stations on the available channels (initializing the base station with an initial set of bandwidth utilization parameters, including a first estimate of the uplink and downlink bandwidth requirements of at least one CPE in a frame). After a mobile station begins active communication on the system, a second allocation (updating initial set of bandwidth utilization parameters with an actual set of bandwidth utilization parameters based on the monitoring) is used to change the phase (slots), of

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some mobile stations on a channel, which has become heavily loaded (monitoring bandwidth use by at least one CPE and the base station).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 25, 39-41, 49, 61, and 92-96 are rejected under 35 U.S.C. 103(a) as being unpatentable over Papadopoulos et al (US Patent No. 5,594,720) in view of Raith et al (US Patent No. 5,729,531).

With respect to claims 25, 49, 61, Papadopoulos et al discloses a method of dynamically allocating time slots within a frame for uplink and downlink transmissions. Papadopoulos et al does not disclose uplink and downlink bandwidth requirements are initially determined when the link is installed in the communication system. Raith et al discloses (see Abstract) a method of evenly distributed bandwidth of the available channels to the mobile stations before the mobile stations actively communicated in the system. It would have been obvious to one having ordinary skill in the art at the time the invention was made to include the feature of allocating bandwidth to the mobile stations before the mobile stations actively communicated in Papadopoulos et al's system, as suggested by Raith et al, for initial data transmissions.

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With respect to claims 39-41 and 92-96, Papadopoulos et al discloses a method of dynamically allocating time slots within a frame for uplink and downlink transmissions. Papadopoulos et al does not disclose statistical bandwidth parameters comprise both an initial and actual set of statistical parameters reflective of the bandwidth requirements of the communication link. Raith et al discloses (see Abstract) a general allocation (initial set of statistically parameters reflective of bandwidth requirements) method to approximately evenly distribute the mobile stations on the available channels. After a mobile station begins active communication on the system, a second allocation (actual set of statistical parameters reflective of bandwidth requirements) is used to change the phase (slots), of some mobile stations on a channel, which has become heavily loaded. It would have been obvious to one having ordinary skill in the art at the time the invention was made to include the feature of allocating bandwidth to the mobile stations according to the initial and actual set of statistical parameters in Papadopoulos et al's system, as suggested by Raith et al, to flexibly accommodate different transmissions needs.

Allowable Subject Matter

5. Claims 78-87 are allowed.

Response to Arguments

6. Applicant's arguments with respect to claims 24-96 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

7. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Heide (US Patent No. 5,677,909) discloses an apparatus for exchanging data between a central station and a plurality of wireless remote stations on a time divided communication channel.

Chuang et al (US Patent No. 6,052,594) discloses a system and method for dynamically assigning channels for wireless packet communications.

Yun et al (US Patent No. 6,047,189) discloses an adaptive method for channel assignment in a cellular communication system.

Larsson et al (US Patent No. 5,956,642) discloses adaptive channel allocation method and apparatus for multi-slot, multi-carrier communication system.

Kerns (US Patent No. 5,956,330) discloses bandwidth management in a heterogeneous wireless personal communications system.

Drakopoulos et al (US Patent No. 5,506,848) discloses demand assignment system and method for mobile users in a community of interest.

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Anh-Vu H Ly whose telephone number is 703-306-5675. The examiner can normally be reached on Monday-Friday 7:00am - 4:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Hassan Kizou can be reached on 703-305-4744. The fax phone numbers for the organization where this application or proceeding is assigned are 703-872-9314 for regular communications and 703-872-9314 for After Final communications.

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Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-305-4750.

avl

May 20, 2003



HASSAN KIZOO
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2600